

LAMPIRAN

Listing Program Arduino

```
#include <Wire.h>
#include <LiquidCrystal_I2C.h>
#include <SoftwareSerial.h>
#include <DFPlayer_Mini_Mp3.h>

#define S0 4
#define S1 5
#define S2 6
#define S3 7
#define sensorOut 8

LiquidCrystal_I2C lcd(0x3F ,2,1,0,4,5,6,7,3, POSITIVE);
SoftwareSerial mySerial(10, 11);

int inReset = 2;
int inCetak = 3;
int inJumlah = 12;
int inKalib = 13;
int reset = 0;
int cetak = 0;
int jumlah = 0;
int kalib = 0;

int redFrequency = 0;
int greenFrequency = 0;
int blueFrequency = 0;
int merah = 0;
int hijau = 0;
int biru = 0;
int merah1 = 0;
int hijau1 = 0;
int biru1 = 0;
```

```
int merah2 = 0;
int hijau2 = 0;
int biru2 = 0;
int merah3 = 0;
int hijau3 = 0;
int biru3 = 0;
int merah4 =0;
int hijau4 =0;
int biru4 =0;
int merah5 =0;
int hijau5 =0;
int biru5 =0;
int merah6 =0;
int hijau6 =0;
int biru6 =0;
int merah7 =0;
int hijau7 =0;
int biru7 =0;
int merah8 =0;
int hijau8 =0;
int biru8 =0;
int mk, hk, bk;
//rgb 1.000
int m1[8]= {65, 64, 66, 67, 68, 69,71,72 };
int h1[13]= {64, 66, 70, 71, 72, 76, 78,79, 81 ,80,74,75};
int b1[12]= {51, 57, 58,59, 74, 76, 77, 78, 79, 80, 60, 61};
//rgb 2.000
int m2[13]= {55, 56, 57, 58, 59, 60, 61, 62, 74, 81, 82,78,72};
int h2[11]= {62, 63, 64, 65, 66, 67, 68, 80,81, 82, 83};
int b2[13]= {53, 54,55, 56,57, 58, 59, 60, 61, 63, 65, 66, };
//rgb 5.000
int m3[12]= { 53, 54,56, 59, 60,63, 64, 65, 66, 57, 58,59};
int h3[14]= {69, 70, 71, 74, 73,75, 85, 86,87, 79, 77,78, 82,84};
int b3[7]= {66, 67, 68, 71, 72, 73, 74};
//rgb 10.000
```

```

int m4[15]= {62, 67, 68, 69, 75,74, 76, 77, 90, 78, 87, 88,89,91,92};
int h4[15]= {109, 104, 103, 111,110, 92,93, 81,87, 88, 77,78,112,107,113};
int b4[12]= {51, 52, 53, 57, 58, 59, 62, 63, 72, 73, 74,75};
//rgb 20.000
int m5[11]= {82, 86,87, 88, 89, 71,72, 65,68,69, 70};
int h5[13]= {65, 66, 69, 70, 73, 74, 77, 79, 80, 81, 82, 83, 84};
int b5[10]= {77, 76, 58, 59, 52, 57, 63, 64, 69,73};
//rgb 50.000
int m6[14]= {75, 76,78, 79, 81, 82, 85, 86, 87, 88, 94, 98,91, 100};
int h6[14]= {68, 71,67, 73, 74, 75, 76, 77, 78, 79, 83, 84, 85,82 };
int b6[12]= {48, 50,72, 51,52, 53, 54, 55, 56, 57, 58, 59};
//seratusribu
int m7[13]= {50, 51, 53, 54, 55, 56, 57, 55, 58, 59,60, 61, 52};
int h7[16]= {81,82 ,83, 85, 86, 87, 60, 67, 69, 72, 73, 74, 75, 70,90,91};
int b7[14]= {60, 62, 63, 65, 66, 70, 69, 53, 52, 54, 55, 56, 57, 47, };
// uangpalsu
Int m8[26]=
{55,51,41,44,43,45,46,47,48,49,51,53,53,60,61,62,63,64,80,70,58,81,82,83,6
7,68};
int h8[24]=
{50,51,52,53,54,55,56,57,58,59,60,61,62,63,65,66,67,68,69,69,70,71,72,73,}
;
int b8[15]= {39,40,41,38,42,43,44,45,46,47,48,49,50,52,53};
// uangpalsu

//JANGAN LUPA DIBAWAH DIUBAH
int mr1;
int hj1;
int br1;
int mr2;
int hj2;
int br2;
int mr3;
int hj3;
int br3;

```

```
int mr4;
int hj4;
int br4;
int mr5;
int hj5;
int br5;
int mr6;
int hj6;
int br6;
int mr7;
int hj7;
int br7;
int mr8;
int hj8;
int br8;
float total;
unsigned char state=0;
```

```
void setup() {

    pinMode(inReset, INPUT);
    pinMode(inCetak, INPUT);
    pinMode(inJumlah, INPUT);
    pinMode(inKalib, INPUT);

    // Setting the outputs
    pinMode(S0, OUTPUT);
    pinMode(S1, OUTPUT);
    pinMode(S2, OUTPUT);
    pinMode(S3, OUTPUT);

    // Setting the sensorOut as an input
    pinMode(sensorOut, INPUT);

    // Setting frequency scaling to 20%
```

```

digitalWrite(S0,HIGH);
digitalWrite(S1,LOW);

// Begins serial communication
Serial.begin(9600);

Serial.println();
Serial.println("Tekan 'a' untuk menampilkan");
Serial.println("Tekan 'b' untuk kalibrasi");
Serial.println("Tekan 'p' untuk print");

lcd.begin (16,2); //LCD untuk ukuran 16x2
Serial.begin (9600);
mySerial.begin (9600);
mp3_set_serial (mySerial);
delay(15);
mp3_set_volume (25);

lcd.clear();
lcd.setCursor(0, 0); //baris pertama
lcd.print("T1=RGB");
lcd.setCursor(8, 0);
lcd.print("T2=TTL");
lcd.setCursor(0, 1);
lcd.print("T3=CTK");
lcd.setCursor(8, 1);
lcd.print("T4=RST");
delay(1);
}
void loop() {

reset = digitalRead(inReset);
cetak = digitalRead(inCetak);
jumlah = digitalRead(inJumlah);
kalib = digitalRead(inKalib);

```

```
if (reset == LOW)
{
    total=0;
    setup();
}

if (cetak == LOW)
{
    test();
}

if (jumlah == LOW)
{
    totalrupiah();
}

if (kalib == LOW)
{
    kalibrasi1();
}

/* if(Serial.available())
{
    char temp = Serial.read();
    if(temp=='a')
    state=1;
    if(temp=='b')
    state=2;
    if(temp=='p')
    state=3;
    if(temp=='t')
    state=4;
}
```

```
switch(state)
{
  case 0:
    break;
  case 1:
    rgb();
    break;
  case 2:
    kalibrasi1();
    break;
  case 3:
    test();
    break;
  case 4:
    totalrupiah();
    break;

  */
}

void rgb(){
// Setting RED (R) filtered photodiodes to be read
digitalWrite(S2,LOW);
digitalWrite(S3,LOW);

// Reading the output frequency
redFrequency = pulseIn(sensorOut, LOW);

// Printing the RED (R) value
Serial.print("R = ");
Serial.print(redFrequency);
delay(100);

// Setting GREEN (G) filtered photodiodes to be read
digitalWrite(S2,HIGH);
```

```
digitalWrite(S3,HIGH);

// Reading the output frequency
greenFrequency = pulseIn(sensorOut, LOW);

// Printing the GREEN (G) value
Serial.print(" G = ");
Serial.print(greenFrequency);
delay(100);

// Setting BLUE (B) filtered photodiodes to be read
digitalWrite(S2,LOW);
digitalWrite(S3,HIGH);

// Reading the output frequency
blueFrequency = pulseIn(sensorOut, LOW);

// Printing the BLUE (B) value
Serial.print(" B = ");
Serial.println(blueFrequency);
delay(100);
}

void kalibrasi1()
{
  digitalWrite(S2,LOW);
  digitalWrite(S3,LOW);
  Serial.print("Nilai R Mata Uang: ");
  merah1 = pulseIn(sensorOut, LOW);
  Serial.print(merah1);
  delay(100);
  lcd.clear();
  lcd.setCursor(0, 0); //baris pertama
  lcd.print("R=");
```

```

lcd.setCursor(2, 0);
lcd.print(merah1);

digitalWrite(S2,HIGH);
digitalWrite(S3,HIGH);
Serial.print(", Nilai G Mata Uang: ");
hijau1 = pulseIn(sensorOut, LOW);
Serial.print(hijau1);
delay(100);
lcd.setCursor(7, 0); //baris pertama
lcd.print("G=");
lcd.setCursor(9, 0);
lcd.print(hijau1);

digitalWrite(S2,LOW);
digitalWrite(S3,HIGH);
Serial.print(", Nilai B Mata Uang: ");
biru1 = pulseIn(sensorOut, LOW);
Serial.println(biru1);
delay(100);
lcd.setCursor(0, 1); //baris pertama
lcd.print("B=");
lcd.setCursor(2, 1);
lcd.print(biru1);
state=0;
}

void test()
{
digitalWrite(S2,LOW);
digitalWrite(S3,LOW);
merah = pulseIn(sensorOut, LOW);
delay(100);

```

```
digitalWrite(S2,HIGH);
digitalWrite(S3,HIGH);
hijau = pulseIn(sensorOut, LOW);
delay(100);
```

```
digitalWrite(S2,LOW);
digitalWrite(S3,HIGH);
biru = pulseIn(sensorOut, LOW);
delay(100);
state=0;
```

```
// for 1000
for (mr1=0; mr1<7; mr1++)
{
  if(merah == m1[mr1])
  {
    for(hj1=0; hj1<12; hj1++)
    {
      if(hijau == h1[hj1])
      {
        for(br1=0; br1<12; br1++)
        if(biru == b1[br1])
        {
          lcd.clear();
          lcd.setCursor(0, 0); //baris pertama
          lcd.print("Rp 1.000");
          Serial.println("Rp 1.000");
          mp3_play (1);
          total += 1000;
          delay(3000);

          }
        }
      }
    }
  }
}
```

```

    }
  }

  // for 2.000
  for (mr2=0; mr2<13; mr2++)
  {
    if(merah == m2[mr2])
    {
      for(hj2=0; hj2<11; hj2++)
      {
        if(hijau == h2[hj2])
        {
          for(br2=0; br2<13; br2++)
          if(biru == b2[br2])
          {
            lcd.clear();
            lcd.setCursor(0, 0); //baris pertama
            lcd.print("Rp 2.000");
            Serial.println("Rp 2.000");
            mp3_play (2);
            total += 2000;
            delay(3000);

          }
        }
      }
    }
  }

  // for 5.000
  for (mr3=0; mr3<13; mr3++)
  {
    if(merah == m3[mr3])
    {
      for(hj3=0; hj3<14; hj3++)

```

```

{
  if(hijau == h3[hj3])
  {
    for(br3=0; br3<7; br3++)
    if(biru == b3[br3])
    {
      lcd.clear();
    }
  }
  lcd.setCursor(0, 0); //baris pertama
  lcd.print("Rp 5.000");
  Serial.println("Rp 5.000");
  mp3_play (3);
  total += 5000;
  delay(3000);

}
}
}
}
}

// for 10.000
  for (mr4=0; mr4<15; mr4++)
  {
    if(merah == m4[mr4])
    {
      for(hj4=0; hj4<15; hj4++)
      {
        if(hijau == h4[hj4])
        {
          for(br4=0; br4<12; br4++)
          if(biru == b4[br4])
          {
            lcd.clear();
          }
        }
      }
    }
  }
  lcd.setCursor(0, 0); //baris pertama
  lcd.print("Rp 10.000");

```

```

Serial.println("Rp 10.000");
mp3_play (4);
total += 10000;
delay(3000);

    }
  }
}
}

// for 20.000
for (mr5=0; mr5<11; mr5++)
{
  if(merah == m5[mr5])
  {
    for(hj5=0; hj5<13; hj5++)
    {
      if(hijau == h5[hj5])
      {
        for(br5=0; br5<10; br5++)
        if(biru == b5[br5])
        {
          lcd.clear();
          lcd.setCursor(0, 0); //baris pertama
          lcd.print("Rp 20.000");
          Serial.println("Rp 20.000");
          mp3_play (5);
          total += 20000;
          delay(3000);

        }
      }
    }
  }
}

```

```

}

// for 50000
for (mr6=0; mr6<14; mr6++)
{
if(merah == m6[mr6])
{
for(hj6=0; hj6<13; hj6++)
{
if(hijau == h6[hj6])
{
for(br6=0; br6<12; br6++)
if(biru == b6[br6])
{
lcd.clear();
lcd.setCursor(0, 0); //baris pertama
lcd.print("Rp 50.000");
Serial.println("Rp 50.000");
mp3_play (6);
total += 50000;
delay(3000);

}
}
}
}
}

// for 100.000
for (mr7=0; mr7<13; mr7++)
{
if(merah == m7[mr7])
{
for(hj7=0; hj7<16; hj7++)
{

```

```

    if(hijau == h7[hj7])
    {
        for(br7=0; br7<14; br7++)
            if(biru == b7[br7])
            {
                lcd.clear();
                lcd.setCursor(0, 0); //baris pertama
                lcd.print("Rp 100.000");
                Serial.println("Rp 100.000");
                mp3_play (7);
                total += 100000;
                delay(3000);

            }
        }
    }
}

// for uangpalsu
for (mr8=0; mr8<26; mr8++)
{
    if(merah == m8[mr8])
    {
        for(hj8=0; hj8<24; hj8++)
        {
            if(hijau == h8[hj8])
            {
                for(br8=0; br8<15; br8++)
                    if(biru == b8[br8])
                    {
                        lcd.clear();
                        lcd.setCursor(0, 0); //baris pertama
                        lcd.print("Uang Palsu");
                        Serial.println("Uang Palsu");
                    }
            }
        }
    }
}

```

```
    mp3_play (8);  
    // total += 100000;  
    delay(3000);  
  
    }  
    }  
    }  
    }  
    }  
  
    merah=0; hijau=0; biru=0;  
    }  
  
void totalrupiah()  
{  
    lcd.clear();  
    lcd.setCursor(0, 0); // baris pertama  
    Serial.println("Total rupiah: ");  
    lcd.print("Total Uang :");  
    lcd.setCursor(0, 1); // baris kedua  
    Serial.println(total);  
    lcd.print(total);  
    delay(10);  
    state=0;  
  
}
```